

# Data Analysis Modules 2015 Instructions

## April 2015

The Data Analysis Modules 2015 have several changes and improvements over the previous versions.

The major changes are described below:

- Three individual Data Analysis Modules, one for each of the three regions identified in 2014 National Wetland Plant List. The three individual modules are: Arid West (AW), Western Mountains, Valleys, and Coastal (WMVC), and Great Plains (GP). This was done because the plant list was becoming too large and slowed the checking procedure.

U.S. Army Corps of Engineers. 2014 National Wetland Plant List, version 3.2.

[http://wetland\\_plants.usace.army.mil/](http://wetland_plants.usace.army.mil/) U.S. Army Corps of Engineers. Engineer Research and Development Center. Cold Regions Research and Engineering Laboratory, Hanover, NH.

- The “DMA” worksheet is expanded from 360 to 500 lines of data.
- The “Plants” worksheet is expanded from 512 to 600 lines of data.
- “Vegetation Ratings Using Plot-weighted Composition” on Summary Sheet has been deleted as it has not been used much.
- “Plant Region Codes” on the “Header” worksheet has been deleted in favor of individual Data Analysis Modules for each region.
- A new metric, “Bankfull Width,” has been added to the “DMA” and “Data Summary” worksheets.
- The “Plants” worksheet has been updated to reflect the 2014 National Wetland Plant List.
- Regional data has been deleted from the “Plants” worksheet and replaced by a single set of data for the specific region.
- A map of the specific regions has been placed on the “Plants” worksheet.
- Species Composition Table on the “Graphs” worksheet is expanded from 55 to 99 lines.

The amount of time necessary to import and validate data for post 2009 data into the 2015 Data Analysis Modules are usually 5 to 10 minutes. To import pre-2009 and continuous greenline into the 2015 Data Analysis Modules and correct and validate data is about 1 hour per site.

Below are detailed instructions for using the 2015 Data Analysis Modules.

### **I. Enable Macros.** Excel must have macros enabled to run all of the computations in the 2015 Data Analysis Modules.

- a. Excel 97 and 2003.
  1. Click the “Tools” tab.
  2. Click “Options.”
  3. Open the “Security” tab.
  4. Select “Medium” and click “OK.”

5. A security warning will be received when the “Data Analysis Module” is opened.
6. Click “Enable Macros.”
7. Click “OK.”
8. Close and save the “Data Analysis Module.”
9. Open the “Data Analysis Module.”

b. Excel 2007 and 2010.

1. Click the “File” tab.
2. Click “Options.”
3. Open the “Trust Center.”
4. Open “Trust Center Settings...”
5. Open “Macro Settings.”
6. Select “Enable All Macros.”
7. Click “OK.”
8. Close and save the “Data Analysis Module.”
9. Open the “Data Analysis Module.”

## II. Data Transfer to the Data Analysis Modules 2015 or most current version.

- a. Select the appropriate Data Analysis Module for the DMA location, Arid West, Western Mountains, Valley, and Coastal, or Great Plains (see Appendix – Maps, Maps 1, 2, and 3).

1. The Arid West has two sub-regions, Desert Southwest (DS) and Intermountain, Snake River Plain, and Columbia Plateau (INT). (See Appendix – Maps, Maps 4 and 5). This will compute the appropriate “Greenline-to-Greenline” and “Bankfull Width” confidence intervals.

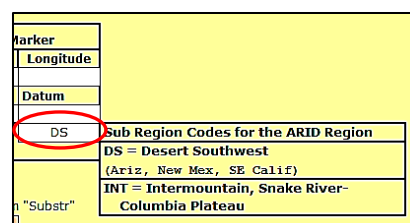


Figure 1 – Selecting the appropriate sub-region

- i. Insert DS in cell D13 in the “Header” worksheet for the Desert Southwest (see Appendix – Maps, Map 4 and Figure 1).
- ii. Insert INT in cell D13 in the “Header” worksheet of the Intermountain, Snake River Plains, and Columbia Plateau also include the Wyoming Basin (see Appendix – Maps, Map 5 and Figure 1).

2. The Western Mountains, Valleys, and Coastal, and Great Plains do not have a selection option.

- b. Transferring data from a **post-2009** Data Entry Module to the Data Analysis Module 2015.

1. Open the most current version of the Data Analysis Module (e.g., 2015).
2. **Rename the Data Analysis Module to reflect the name of the DMA or stream (e.g., Silver Creek DM1 Data Analysis Module 2015).**
3. From the “Instructions” worksheet, click the “Get Data” (to get data from a Data Entry or other post-2009 Data Analysis Module) button in

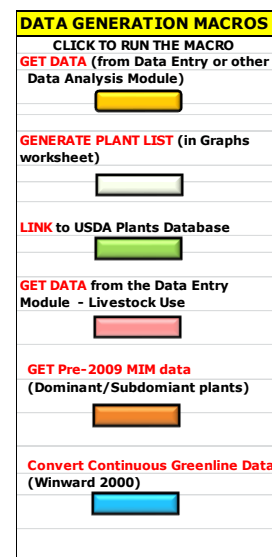


Figure 2 – Data Generation Macros

the DATA GENERATION MACROS box to transfer the data (see figure 2).

4. The browsing window (see figure 3) will open. Click “OK.” Select the appropriate data entry or data analysis file; double click or click “Open” (see figure 4).
  5. When the data transfer is complete, an Excel window will appear (see figure 5); click “OK.”
  6. When the transfer is complete,
- c. Data recorded on paper Field Data Sheets are entered directly into the appropriate Data Analysis Module 2015.

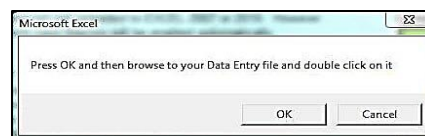
### III. Data Correction Macros. These ensure that all data is transferred and complete in the Header, DMA, Substr, Thal, and Comments worksheets.

- a. **Correct Plant Codes.** Click the “Correct Plant Codes” button (see figure 6) in the Data Correction Macros box on the Instructions worksheet. This macro compares all plants recorded in the DMA worksheet with the plant list in the “Plants” worksheet.

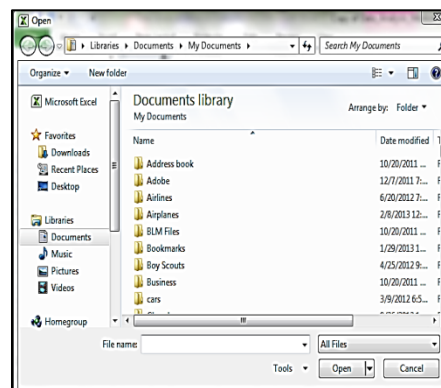
1. An Excel Window will appear (figure 7). Click “OK.” Another window appears with three options from which to select.

- i. “Ignore” leaves the plant code as is (figure 8). Select this when the plant code is correct and a new plant code will be added to the MIM database later. After new plant codes are added to the MIM database, repeat the Correct Plant Codes procedure.
- ii. “Quit” stops the Correct Plant Codes macro (figure 8). A new plant may be added to the MIM database. Repeat the Correct Plant Code procedure.
- iii. Or, select the correct plant code from the dropdown list (figure 8). Type the first letter of the correct plant code, the dropdown list will move to that letter in list, continue down the list to the correct code, select it and click “OK.” An Excel window will display the selected plant code (see figure 9), click “OK.” The Excel macro will replace all of the plants codes on the worksheet with that particular spelling with the correct plant code.

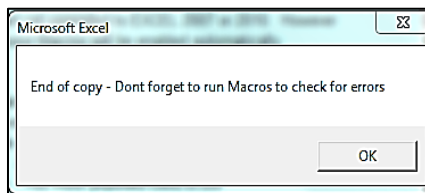
- iv. There are at least four species that have the same four letters in the code, sabo (*Salix bonplandiana*) and sabo2 (*Salix boothii*), and salu (*Salix lucida*) and salu2 (*Salix lutea*). If the code is sabo2 the “Correct Plant Codes” module will not indicate an error if sabo was



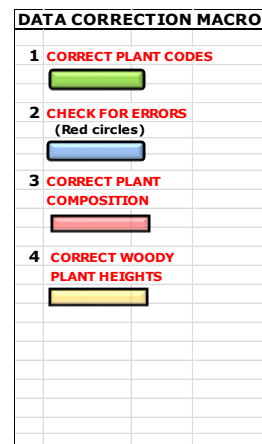
**Figure 3** - Excel window after clicking "Get Data" button.



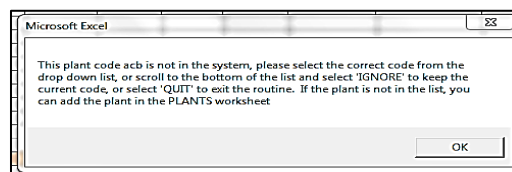
**Figure 4** -- Browsing window, select the appropriate file.



**Figure 5** - Excel window upon completion of data transfer.

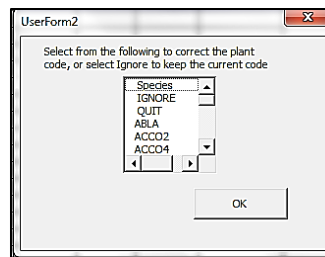


**Figure 6** - Data Corrections Macros on the Instruction Spreadsheet.

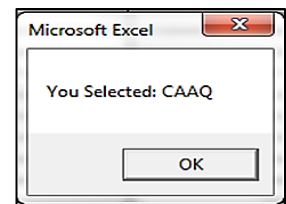


**Figure 7** - Message when a plant code in the DMA spreadsheet is not in the Plants Spreadsheet.

entered in the DMA worksheet. The easiest way to correct this problem is to use the Find/Replace function in Excel. Select the white and blue rows and columns in the DMA worksheet, click on Find or Find/Replace, enter the invalid code “sabo” in the find field and enter “sabo2” in the replace field, click on “Replace All.”



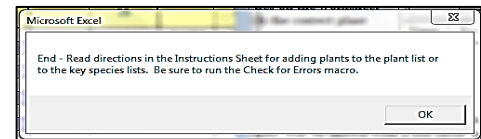
**Figure 8** – Selection options for correcting plant codes.



**Figure 9** - Click "OK."

2. Continue until the procedure is completed with the Excel window shown in figure 10. Click “OK.”

**b. Adding plant codes.** Adding plant codes to the MIM Plants database and the Key Species database in the Data Analysis Module.



**Figure 10** - Excel window which appears at the end of the “Correct Plant Codes” procedure. It reminds the user to run the “Check for Errors (red circle)” macro.

1. **MIM Plants database.** Click on the PLANTS worksheet.

Go to the bottom of the plant list and add the new plant species (figure 11).

- i. **Use the plant codes from the NRCS Plants Database** <http://plants.usda.gov/java/>. Enter the new plant species code, scientific – common names, if a plant is Woody (y/n), if the plant is Hydric (y/n), whether the species is Herbaceous (y/n), and if it is a Forb (y/n). The Wetland Rating is from the Wetland Indicator Status using the most current “Wetland Indicator Status” from the Army Corps of Engineers website <http://rsgisias.crrel.usace.army.mil/NWPL/>.

Determine the ecological Status and the Winward Stability Rating from the literature (see *Multiple Indicator Monitoring (MIM) of Stream Channels and Streamside Vegetation*, Appendix H for the rules). Complete the information in the default (see figure 11). The

Species	Scientific - Common Name	Woody?	Hydric?	Herb?	Forb?	Wetland Rating	Successional Status	Winward stability rating
VISO	VIOLA SORORIA - Little - sand violet			y	y	50	M	2
WD	WOOD - Anchored Wood					100	L	10
XAST	ZANTHIUM STRUMARIUM - Rough cocklebur			y	y	50	E	2

**Figure 11** – Add new plants to the bottom of the plant list on the Plants spreadsheet.

regions changed in the 2012 National Wetland Plant List. Descriptions and maps of the regions (see Appendix – Maps, Maps 1, 2, and 3) are at <http://rsgisias.crrel.usace.army.mil/NWPL/>.

- ii. Sort the data base by selecting all the data (all blue and white columns and rows) beginning with Ignore. Click “Sort A to Z” in the Excel Home tab.

2. **Key Species database.** Click on the “Key Sp” worksheet. The Stubble Height Key Species and Woody Plant Lists will appear on the worksheet (figure 12).

STUBBLE HEIGHT KEY SPECIES LIST		WOODY PLANTS LIST
AGGI2		ABGR
AGST2		ABLA
ALGE2		ACCI
ALOPE		ACER
ALPR3		ACGL
ARDO4		ACGR3

**Figure 12** – Key Species spreadsheet

- i. Add new key stubble height (graminoid) species plant codes to the bottom of the Key Stubble Height Species

List. This list should be resorted to facilitate the dropdown lists.

- ii. Add new key woody species codes to the bottom of the Key Woody Plant List. **This list should be resorted to facilitate the dropdown lists.**

- c. **Check for Errors.** This procedure checks the Header, DMA, Substr, and Thal worksheets for possible errors. A red circle is placed around the cell with a possible error.

1. Click the “**Check for Errors**” button in the Data Validation box on the Instructions worksheet (figure 5) to run the macro. The procedure will run and return to the Instruction worksheet. Click on the DMA worksheet. Possible errors will be shown with a red circle around the cell. Some common errors are shown on the example in figure 13. The red circles are not removed by some error corrections.

- i. Incorrect codes, “a” and “y,” are shown under the “E” Erosional “D” depositional and the “C” Covered “U” uncovered columns under Streambank Stability. Correct these codes. Depositional “D” is assumed because there is no entry in the “erosional feature” column. “y” is adjacent to “u” and is assumed to be typographical error.
- ii. Stubble Height Species column has a red circle around “ug.” “UG” is the plant code for upland grass. This code is not in the MIM Key Species plant list. Upland grass is usually not a key species on riparian areas. The code and the height may be deleted from the DMA worksheet or “ug” must be added to the MIM Key Species list.
- iii. The GGW column has a 400.8 meter width. All of the other measurements are between 3 and 4 meters. It is an obvious typographical error. Correct the DMA worksheet cell to 4.8.
- iv. Check each of the cells with red circles and make the necessary corrections.
- v. Run the macro again and correct any additional errors.

2. The **Correct Plant Composition** button on the “Instructions” worksheet (see figure 5) checks the composition on the DMA worksheet to ensure that each plot has a total composition of 100 or 200 percent. The procedure will copy the data from the “Plant Species” and “Composition” columns in the DMA worksheet to the “Pre-2009 Conversion” table on the Comments worksheet (figure 14). A red circle will be around each cell that does not equal 100 or 200 (figure 15). Make the corrections on the DMA worksheet. **Check that all “Plot #s” are in consecutive order, e.g., 1, 2, 3, etc. If they are not in order, make the necessary corrections.**

3. **Correct Woody Plant Heights**

- a. Correct “Woody Plant Heights” (see figure 5) checks for woody species in the “Species, Wood, or Rock” column and the “Woody Species Height” Column to see if there are heights assigned to non-woody species or woody species without heights. Red circles

Streambanks			Stubble Height	Width
Streambank Stability			Species	GGW
E= Erosional D= Depositional	C= Covered U= Uncovered	F = Fracture, S = Slump, SL = Slough, E = Eroding, A = Absent	(Code)	(cm or inches) (meters)
		106		57
a	y		ug	12.0
d	c		caa	8.0
d	c		caa	12.0
e	c	a	caa	8.0

**Figure 13 -** Red circles around cells indicate possible errors on the Header, DMA, Substr, and Thal spreadsheets. Check each cell. Run the procedure again.

Plot #	Species Rock/Wood	Composition	
	(Code)	(%)	Totals Check

**Figure 14 –** Pre-2009 Table on the Comments spreadsheet.

Plot #	Species Rock/Wood	Composition	
	(Code)	(%)	Totals Check
1	sabo2	99	99

**Figure 15 –** Pre-2009 Table with an error indicated by the red circle.

indicate a problem; correct the data on the table (see figure 16). Click the “Send Data to the DMA Worksheet” button (figure 17).

- b. Pre-2009 data does not contain woody species plant heights. However, “Woody Species Frequency” may be calculated by using the “Correct Woody Plant Heights” (see figure 5) procedure. Insert a 1 for each woody species woody species (the height is not known). The average height will not be accurate, but the woody species frequency will be available for comparison.

#### IV. Analyzing Pre-2009 Data in the Data Analysis Module

**2015.** Dominant and subdominant plant species were recorded rather than the estimated percentage of each species prior to 2009. Open a Data Analysis Module. Make a master copy of the Data Analysis Module and keep it in another location. Rename the DAM, e.g. Data Analysis Module Summerhouse Creek DMA 1.

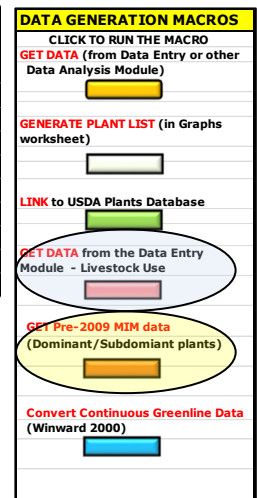
##### a. To transfer data from pre-2009 Data Entry or Data Analysis Modules

1. Click the “GET Pre-2009 MIM Data (Dominant/Subdominant plants)” button (figure 17, yellow oval) in the “Data Generation Macros” on the “Instructions” worksheet to run the macro.

Plot #	Species Rock/Wood	Woody Species height class	Check for missing woody plant
43			0
			0
			0
44			0
	ELPA3	1	0
			0
45			1
			0
			0

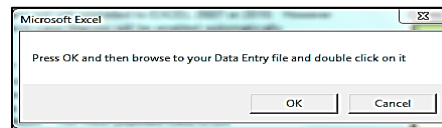
Send data to the DMA Spreadsheet

**Figure 16 --** Plot # 45 show a non-woody plant with a Woody Species Height Class assigned. Plot # 45 shows that a woody plant does not have a height class assigned. Click the “Send Data to the DMA Spreadsheet” button.



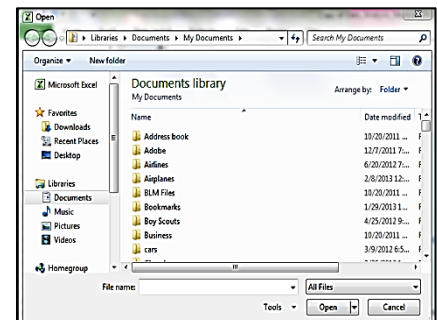
**Figure 17 –** Data Generation Macros.

2. An Excel window will appear (figure 18). Click “OK.”



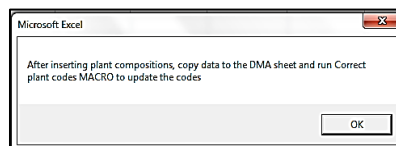
**Figure 18 –** Excel window that open when the “Get Pre-2009 Data” button is clicked.

3. A browsing window will open (figure 19), select the appropriate file and double click or click “Open.” An Excel window (see figure 20) will appear when the “Get Data” macro has completed the data transfer.



**Figure 19 --** Browsing window, select the appropriate file.

4. Check each worksheet, “Header,” “DMA,” “Subtr,” “Thal,” and “Comments,” to ensure all data was transferred. The “Plot No.” and “Greenline Composition” columns in the DMA worksheet will have no data. It will be added later. Also no data will be shown in the Woody Species Height column as the data was not collected before 2009. The Streambank Stability columns are blank, but the data has been transferred directly to the computation area and the results are displayed on the Data Summary worksheet.



**Figure 20 –** This window appears when the data transfer is complete. Click “OK”.

Plot #	Species Rock/Wood	Composition	
	(Code)	(%)	Totals Check
1	caut		0
2	sabo2		0
	caut		
	cane2		
3	cane2		0
	caut		

**Figure 21 –** Pre-2009 MIM Data Table on the “Comments” spreadsheet.



5. The “Plot No.,” “Species/Rock/Wood,” and “Composition” data are found in the Pre-2009 MIM Data Table columns “Z” through “AL” on the Comments” worksheet (figure 21).

6. Assign a composition percent to each species. Dominant species are in **bold** type and subdominant not bold (figure 22). Dominant herbaceous species total 67 and sub dominant herbaceous 33 for a total of 100. Woody species also total 100. Each plot must total 100 if only herbaceous or woody species are present and 200 if both herbaceous and woody species are in the same plot. The “Total Check” column calculates the total percentage for each plot.

7. Woody species percentages are calculated by dividing the number of woody species, dominant and sub dominant, in a plot into 100. If two woody species occur in a plot, each is recorded as 50. Single herbaceous species recorded in either the dominant or subdominant columns are recorded as 100. Below are some examples of combinations that commonly occur (figure 22).

- Single species, dominant or subdominant.** When as single herbaceous or woody specie plant code is in the plot. The total for the row and plot is 100 (figure 22, Plot # 1 and 2).
- Two dominant species.** When two species, either two herbaceous or two woody, in the plot, each get 50 percent (figure 22, plot # 3 and 4).
- Herbaceous plant species in dominant and subdominant columns.** Herbaceous species occur as both the dominant and the subdominant, record 67 for the dominant plant and 33 for the subdominant plant (figure 22, plot # 5).
- One dominant herbaceous and two subdominant herbaceous plants, rock and/or wood.** One dominant species and two subdominant species are recorded at 67 for the dominant and 17 and 16 for subdominant (figure 22, plot # 6).
- One woody and one herbaceous species, rock, and/or wood.** One woody specie and herbaceous specie are recorded as 100 and 100. The total for the plot is 200 (figure 22, plot # 7).
- Multiple herbaceous species, rock, and/or wood.** Plot # 8 on figure 22 shows one dominant herbaceous species recorded as 67 and three subdominant recorded as 11, 11, and 11 for a total of 33.
- Two woody species.** Two woody species are recorded as 50 and 50 for 100 (figure 22, plot # 9).
- Two woody species and three herbaceous species.** Two woody species are recorded as 50 and 50 and two dominant herbaceous and one subdominant species are recorded as 42, 42 and 16 for a total of 200 (figure 22, plot # 10).

Plot #	Species Rock/Wood	Composition	Totals Check
	(Code)	(%)	
1	<b>cane2</b>	100	100
2	<b>potr5</b>	100	100
3	<b>roar3</b>	50	100
	<b>tory</b>	50	
4	<b>popr</b>	50	100
	<b>cane2</b>	50	
5	<b>popr</b>	67	100
	<b>cane2</b>	33	
6	<b>cane2</b>	67	100
	<b>popr</b>	17	
	<b>agst2</b>	16	
7	<b>roar3</b>	100	200
	<b>popr</b>	100	
8	<b>popr</b>	67	100
	<b>agst2</b>	11	
	<b>cane2</b>	11	
	<b>rk</b>	11	
9	<b>roar3</b>	50	100
	<b>potr5</b>	50	
10	<b>sabo2</b>	50	200
	<b>sage2</b>	50	
	<b>caut</b>	42	
	<b>cane2</b>	42	
	<b>popr</b>	16	
11	<b>sabo2</b>	100	
12	<b>sage2</b>	34	
	<b>alin2</b>	33	200
	<b>cose15</b>	33	
	<b>popr</b>	34	
	<b>agst2</b>	16	
	<b>cane2</b>	16	
	<b>caut</b>	34	

**Figure 22** – Examples of percentages assigned to dominant and sub dominant species. The total for each plot is calculated in the “Total Check” column as percentages are added to each plot.

- i. **One woody plant recorded as subdominant.** Record the woody species as 100 (figure 22, plot # 11).
- j. **One woody and two herbaceous species in the dominant column.** Record the woody species as 100 and each of the herbaceous species as 50 and 50.
- k. **Three woody and 4 herbaceous species, rock and/or wood.** Three woody species are given 34, 33, and 33. Two dominant and two subdominant species, rock, and/or wood are given 34, 34, 16, and 16 (figure 22, plot # 12).

8. Review the “Totals Check” column to ensure that each plot is either 100 or 200.
9. Click the “Send Data to the DMA Worksheet” button (see figure 23).
10. Return to “II. Data Correction Macros.” Complete all of the data corrections procedures.

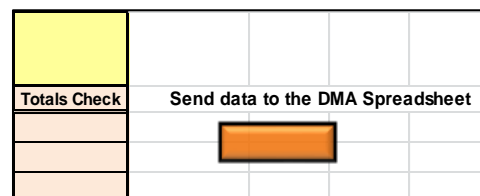


Figure 23– Send data to the DMA Spreadsheet.

## V. Get Data from the Data Entry Module – Grazing Use Only

The “Data Entry Module – Grazing Use Only” is designed for convenience on the field computers running Excel Mobile. It has only Streambank Alteration, Stubble Height, Woody Use, and Streambank Stability in the module. All of the columns are in view without having to scroll across the screen.

- a. Click the “**Get Data** from the Data Entry Module – Grazing Use ONLY” button on Data Generation Macros (see figure 17, light blue oval).
- b. An Excel window (figure 24) will appear, click “OK” and a browsing window appears (figure 25).
- c. Select the appropriate Data Entry Module – Grazing Use Only file, click “OK” or double click on the file.
- d. After the data is transferred to the Data Analysis Module window (figure 26) will appear, click “OK.”
- e. Run “Correct Plant Code” and “Check for Errors” macros (see Section II).

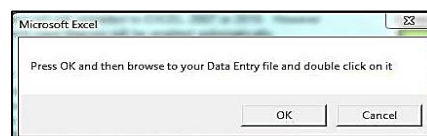


Figure 24 - Excel window after clicking "Get Data" button.

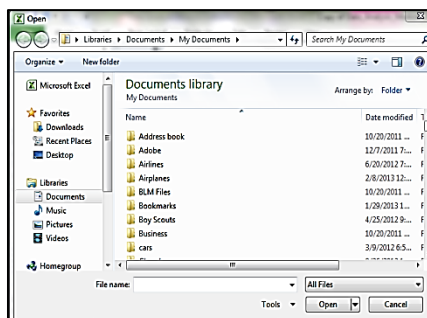


Figure 25 -- Browsing window, select the appropriate file.

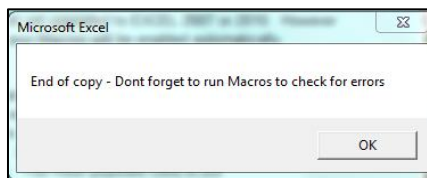


Figure 26 - Excel window upon completion of data transfer.

## VI. Convert Continuous Greenline Data (Winward 2000). This procedure converts continuous greenline data to plots and percent composition allowing for comparison with other data.

- a. Open a copy of the Data Analysis Module 2015. **Rename the file to identify the DMA, e.g., Clear Creek DMA 1.**
- b. The Continuous Greenline Data Conversion begins on column “CO” and column “DM” of the “Comments” worksheet.



- c. Enter the unit of measure recorded by the observer, “S” steps (default), “F” feet, or “M” meters (figure 27).
- d. Enter the length of the steps if known (figure 28). The default is 0.7 meters per step.
- e. Determine the number of plots desired along the greenline (see figure 29). It is located below the rules. The default is 80 and the maximum is 150.
- f. Enter the data into the Distance and Community Type columns in the table (see figure 30). If the data is in digital format, the data may be copied and pasted into the table.
- g. The macro will display plot numbers and community types along the greenline at regular intervals in the colored columns of the Plot Conversion table (figure 31). Community types with very small distances may not be shown.
- h. Use the following rules to convert vegetation community types to percent species composition in the “Species, Rock, or Wood” column (column DB on the “Comments” worksheet).
1. A single species, herbaceous or woody, is recorded in the as 100 (figure 31, plot #s 1 and 2).
  2. One woody and one herbaceous species are recorded as 100 each for a total of 200 (figure 31, plot # 3).
  3. Two woody species in the community type is recorded as 50 each for a total of 100 (figure 31, plot # 4).
  4. When two herbaceous species are present, the first listed species is recorded as 67 and the second species is 33 for a total of 100 (figure 31, plot # 5).
  5. Two woody species and one herbaceous species are recorded as 50 for each of the woody species and 100 for the herbaceous species for a total of 200 (figure 31, plot # 6).
  6. Three woody species in the community type would be recorded as 34, 33, and 33 for a total of 100 (figure 31, plot # 7).

<b>STEPS = S (default)</b>	
<b>METERS = M</b>	
<b>FEET = F</b>	
<b>ENTER DISTANCE TYPE HERE:</b>	
<b>F</b>	

**Figure 17 --** Unit of measure along the greenline.

<b>0.7</b>	meters per step
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**Figure 28 --** Indicate the step length of the observer, if known. The default is 0.7 meter.

You can vary the number of plots desired in the survey, up to a maximum of 150 plots	
<b>NUMBER OF PLOTS:</b>	<b>80</b>

**Figure 29 --** Setting the number of plots along the greenline.

Feet Distance	Community Type	Distance (m)
704	juba	214.5792
347	caaq	320.3448
1	phar	320.6496
117	casi	356.3112
32	carex	366.0648
6	cane	367.8936
226	caut	436.7784
18	sadr/poppr	442.2648
2	alin2	442.8744
27	eleoc	451.104
2	saex	451.7136
2	salu/poppr	452.3232
24	glst	459.6384
12	eqar	463.296
732	poppr	686.4096

**Figure 30 --** Data Entry Table for continuous greenline data.

Plot	Distance	Community	Plot #	Species Rock/Wood	Composition
		Type		(Code)	(%)
1	8.6	juba	1	juba	100
2	368.9	sage2	2	sage2	100
3	437.6	sadr/poppr	3	sadr	100
				poppr	100
4	321.2	sadr/sabo2	4	sadr	50
5	125.1	cane2/poppr	5	cane2	67
				poppr	33
6	321.2	sage2/sabo2/caut	6	sage2	50
				sabo2	50
				caut	100
7	27.0	sage2/sabo2/ribes	7	sage2	34
				sabo2	33
				ribes	33
8	10.2	cane2/agst2/poppr	8	cane2	50
				agst2	33
				poppr	17
9	30.0	rk/wd/poppr	9	rk	50
				wd	33
				poppr	17

**Figure 31 --** Determine and record the "Composition" for each species listed in the community type.

7. When three herbaceous species are in the community type, the first listed is given 50, the second 33, and the third 17 for a total of 100 (figure 31, plot # 8).
8. When rock or wood is recorded in the community type, it uses the same rules as the herbaceous plant species (figure 31, plot # 9).

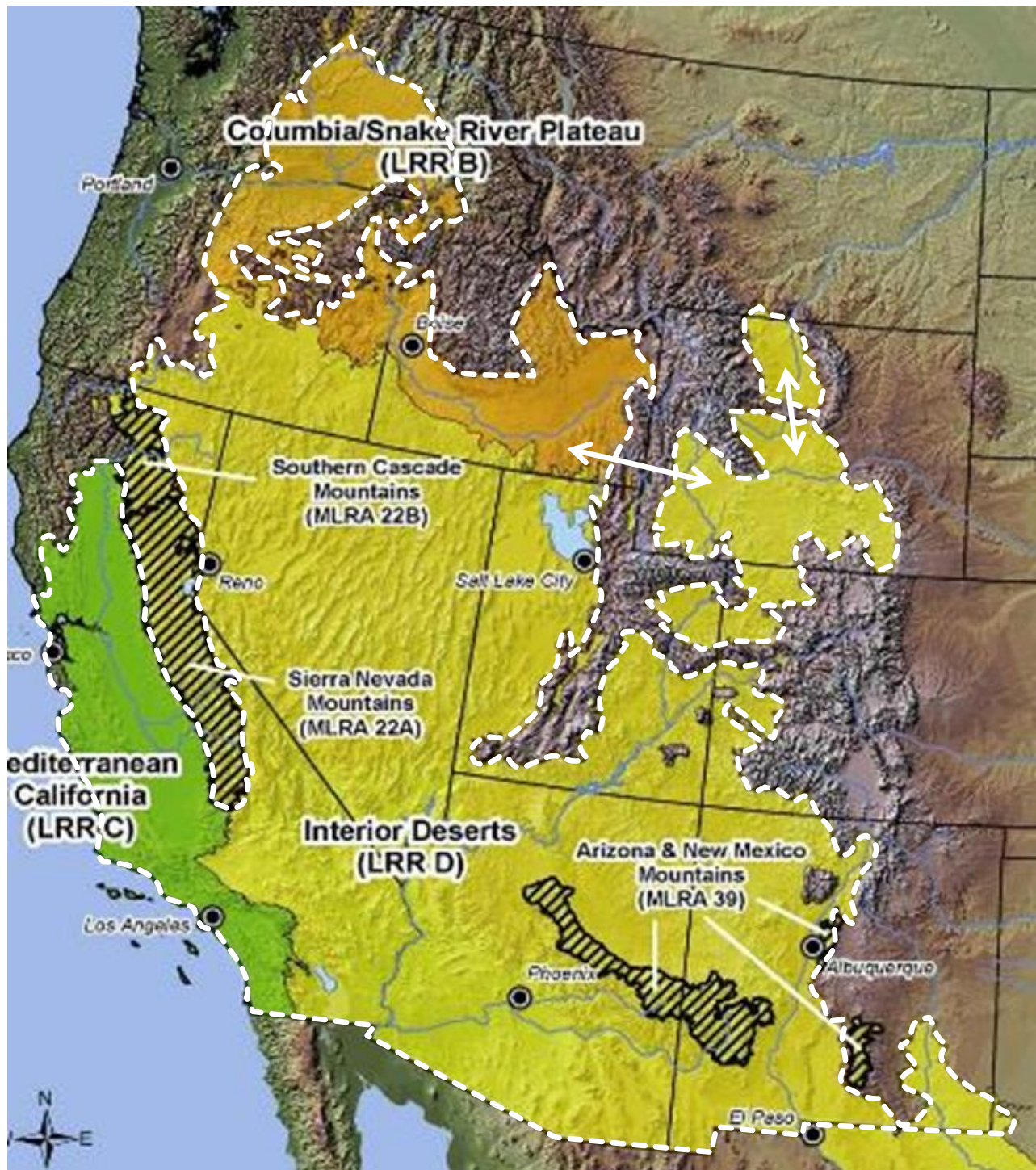
- i. After completing recording the species composition, click the “Send data to the DMA Worksheet” button (see figure 32). The “Plot #, species/rock/wood, and composition,” data will be transferred to the Data Analysis Module.

Send data to the DMA Spreadsheet				
Composition				
(%)				

**Figure 32--** Send data to the DMA spreadsheet.

- j. Return to section “**II, Data Correction Macros**” and follow the instructions.

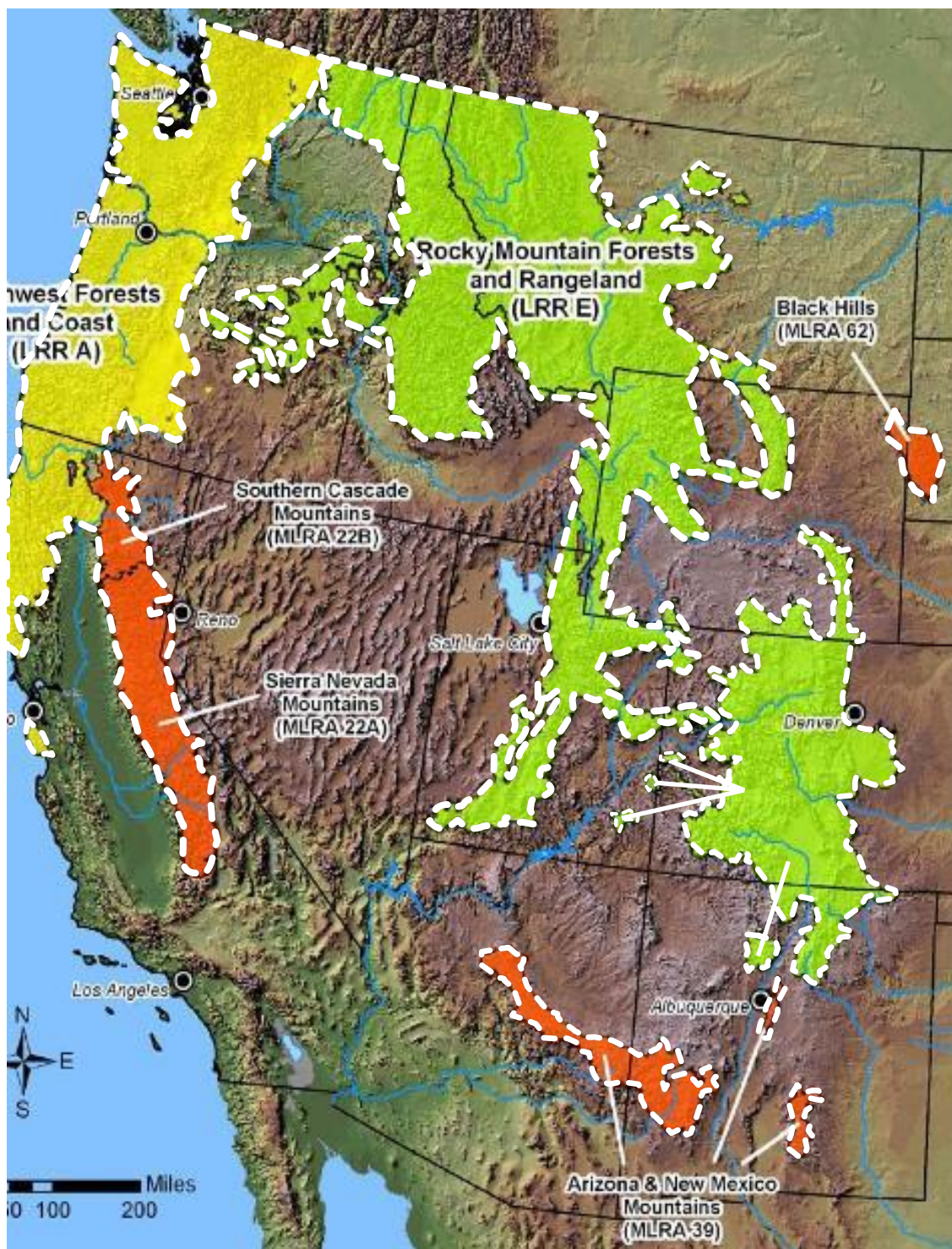
## APPENDIX A – Maps



**Map 1 – Arid West.** Include areas in green, yellow, and orange.

U.S. Army Corps of Engineers. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center. [http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg\\_supp/trel08-28.pdf](http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/trel08-28.pdf). Accessed March, 2015.



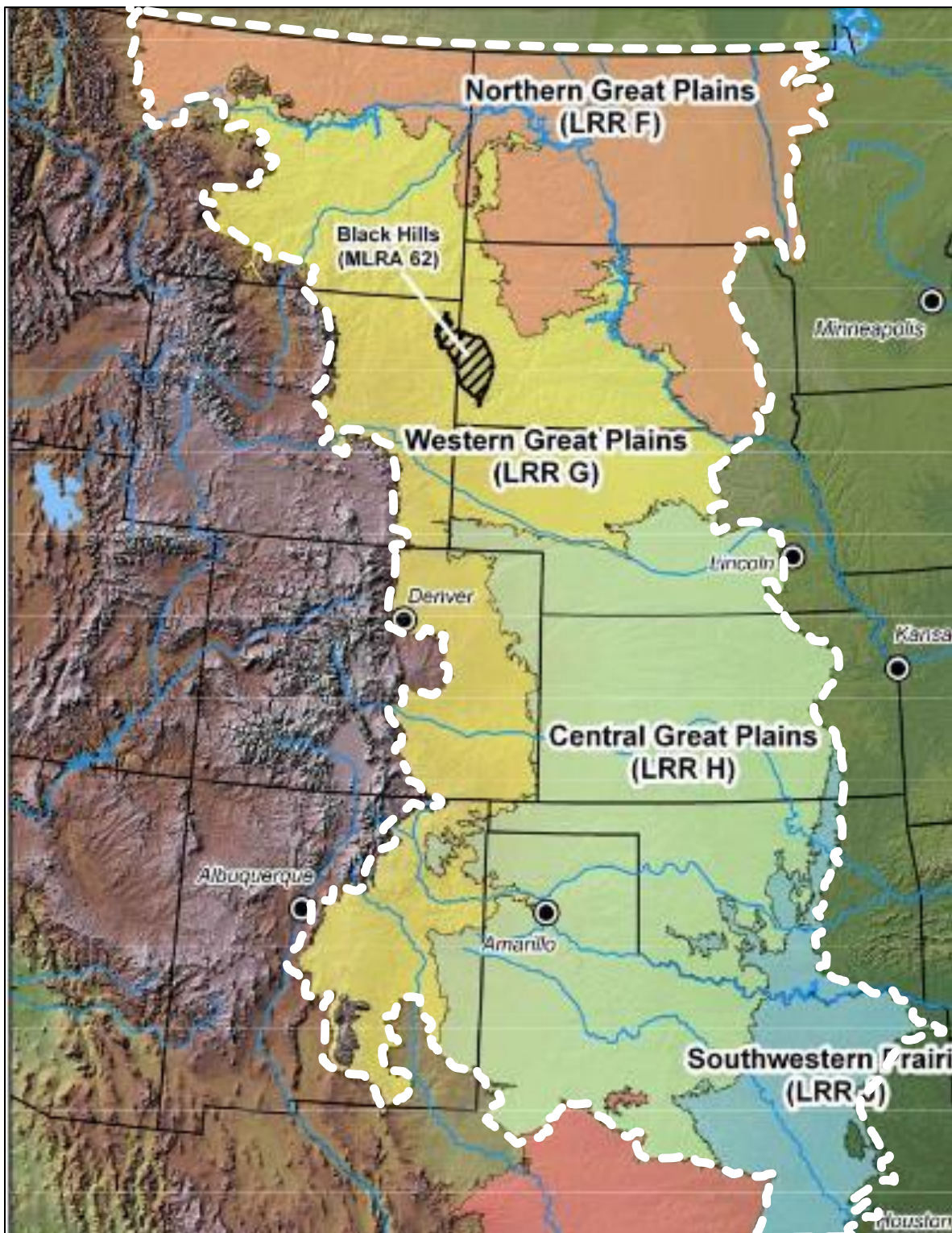


**Map 1 -- Western Mountains, Valleys, and Coastal.** Includes areas in yellow, red, and green. included in this region.

U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

[http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg\\_supp/west\\_mt\\_finalsupp2.pdf](http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/west_mt_finalsupp2.pdf).

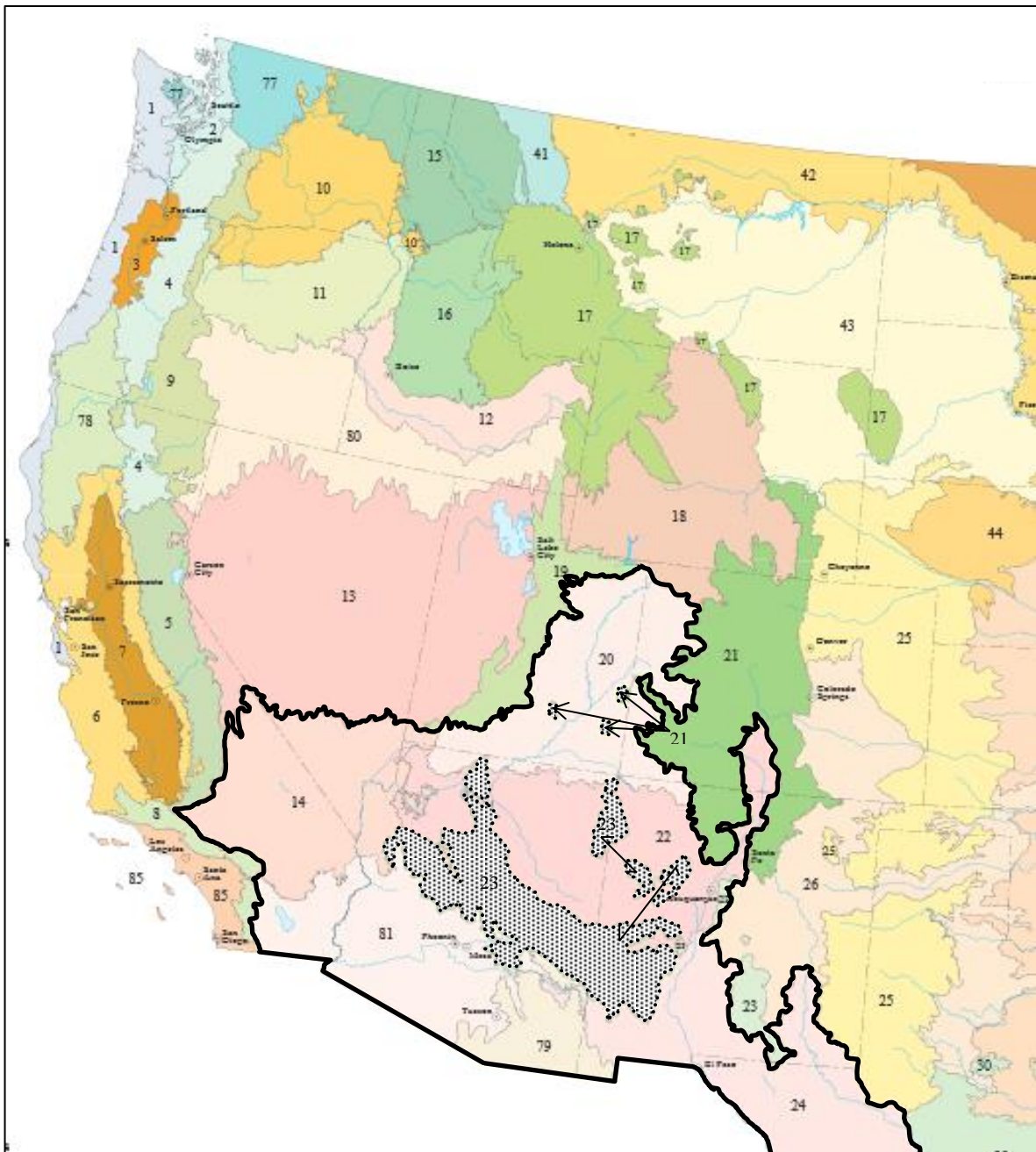




**Map 3 – Great Plains.** Includes all areas in pink, green, and blue (dash outlined area).

U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

[http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg\\_supp/gp\\_supp.pdf](http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/gp_supp.pdf).



**Map 4 – MIM Arid West (Southwest Desert Subregion)** includes the following ecoregions:

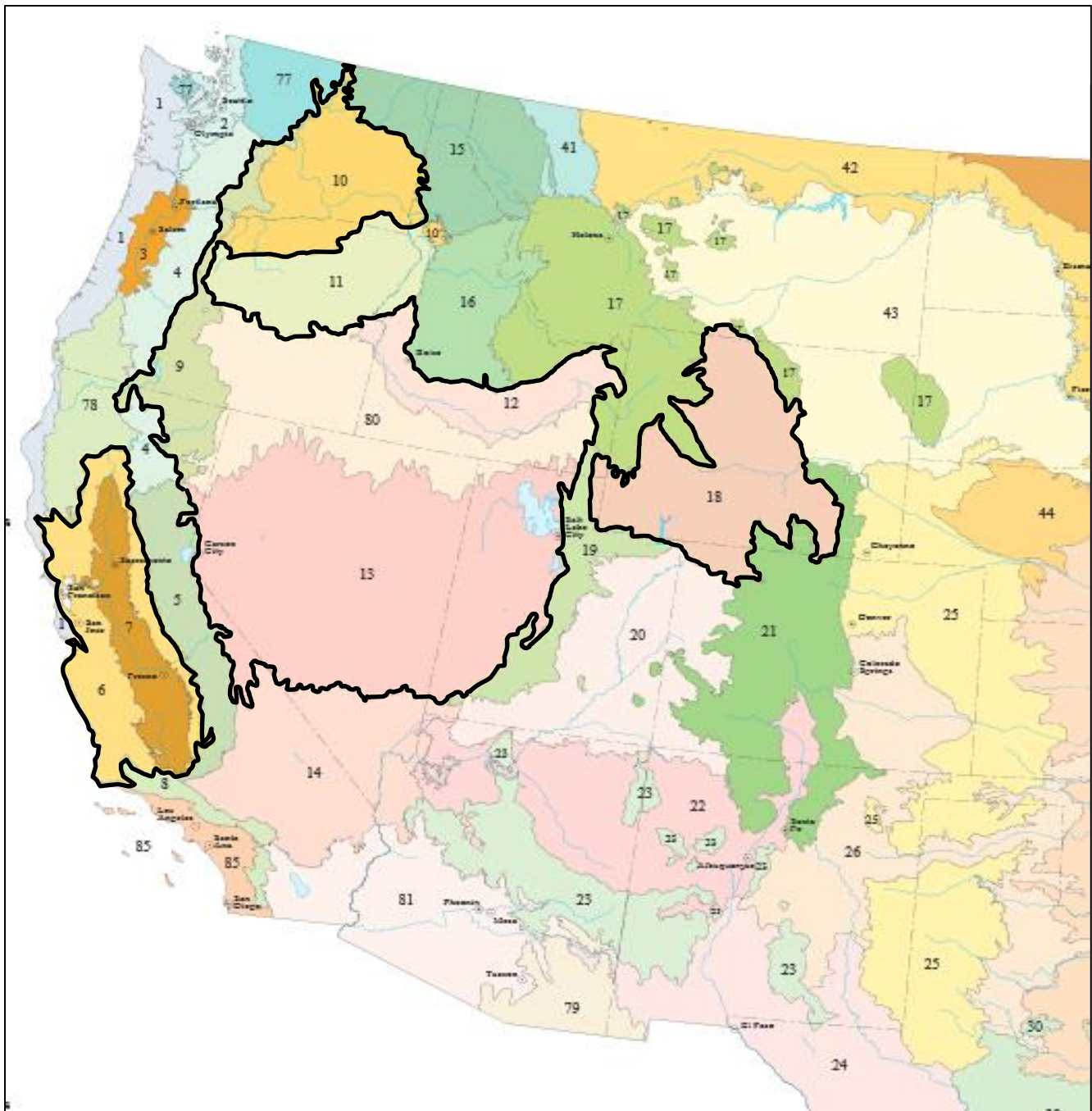
- |                                 |                                     |
|---------------------------------|-------------------------------------|
| 7 – Central California Valley   | 24 – Chihuahuan Deserts             |
| 14 – Mojave Basin and Range     | 79 – Madrean Archipelago            |
| 20 – Colorado Plateaus          | 81 – Sonoran Desert Basin and Range |
| 22 – Arizona/New Mexico Plateau |                                     |

**Exclude** – Shaded areas that include portions of the Southern Rockies (21) and Arizona/ New Mexico Mountains (23)

Level III Ecoregions of the Continental United States (Revised 2013). National Health and Environmental Effects Research Laboratory. U.S. Environmental Protection Agency.

[http://ftp.epa.gov/wed/ecoregions/us/Eco\\_Level\\_III\\_US.pdf](http://ftp.epa.gov/wed/ecoregions/us/Eco_Level_III_US.pdf). Accessed March 2015.





**Map 4 – MIM Arid West (Intermountain Sub-region)** includes the following ecoregions:

- |  |                               |
|--|-------------------------------|
| 6 – Central California Foothills and Coastal Mountains | 12 – Snake River Plain        |
| 7 – Central California Valley                          | 13 – Central Basin and Range  |
| 9 – Eastern Cascades Slopes and Foothills              | 18 – Wyoming Basin            |
| 10 – Columbia Plateau                                  | 80 – Northern Basin and Range |

Level III Ecoregions of the Continental United States (Revised 2013). National Health and Environmental Effects Research Laboratory. U.S. Environmental Protection Agency.

[http://ftp.epa.gov/wed/ecoregions/us/Eco\\_Level\\_III\\_US.pdf](http://ftp.epa.gov/wed/ecoregions/us/Eco_Level_III_US.pdf). Accessed March, 2015.